



STATEMENT OF BASIS

FACILITY 84920 SOLD WASTE MANAGEMENT UNIT NO. 20 45TH SPACE WING CAPE CANAVERAL AIR FORCE STATION BREVARD COUNTY, FLORIDA



PURPOSE OF STATEMENT OF BASIS

This Statement of Basis (SB) has been developed in order to inform the public and give the public an opportunity to comment on a proposed remedy to clean up contamination at Facility 84920. A 45th Space Wing (45th SW) installation restoration partnering (IRP) team consisting of United States Air Force (USAF), United States Environmental Protection Agency (USEPA), the State of Florida Department of Environmental Protection (FDEP), the U. S. Army Corps of Engineers, and various environmental consultants have determined that the proposed remedy is cost effective and protective of human health and the environment. However, prior to implementation of the proposed remedy, the 45th SW IRP team would

Brief Site Description

Facility 84920 was constructed at the intersection of Pier Road and Samuel Phillips Parkway in 1963 (See Figure 1). At various times since it was constructed, it has functioned as an equipment cleaning and testing laboratory, a high pressure gas maintenance plant, and a vehicle maintenance facility.

will evaluate all comments and issues raised in the comments and determine if there is a need to modify the proposed remedy prior to implementation.

like to give an opportunity for the public to comment on the proposed remedy. At any time during the public comment period, the public may comment as described in the "How Do You Participate" section of the SB. Upon closure of the public comment period, the 45th SW IRP team

WHY IS CLEANUP NEEDED?

The results of the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) indicated that several volatile organic compounds (VOCs), two semi-volatile organic compounds (SVOCs), and a polychlorinated biphenyl (PCB) are present in the groundwater at levels that could be potentially harmful to human health. Additionally, aroclor 1260 (a PCB) and benzo(a)pyrene (an SVOC) were detected in the soil at levels that could potentially be harmful to a hypothetical future resident.

HOW DO YOU PARTICIPATE?

The 45th SW IRP team solicits public review and comment on this SB prior to implementation of the proposed

The Clean-up Remedy

The proposed clean-up remedy for Facility 84920 includes (but is not limited to) the following components:

- Natural attenuation of groundwater to remove contaminants through natural processes, primarily biodegradation.
- Implementation of land use controls designed to prevent exposure to site contaminants. These include:
 - Prohibition of residential development.
 - Periodic monitoring of groundwater and surface water to document water quality and contaminant levels.
 - Posting warning signs on-site.

A complete list of land use controls and other protective measures are found in Facility 84920 Land Use Control Implementation Plan (LUCIP).

remedy as a final remedy. The final remedy for Facility 84920 will eventually be incorporated into the Hazardous and Solid Waste Amendments (HSWA) Permit for Cape Canaveral Air Force Station (CCAFS).

The public comment period for this SB and the proposed remedy will begin on the date that a notice of the SB's availability is published in a major local newspaper of general circulation. The public comment period will end 45 days thereafter. If requested during the comment period, the 45th SW IRP team will hold a public meeting to respond to any oral comments or questions regarding the proposed remedy. To request a hearing or provide comments, contact the following person in writing within the 45-day comment period:

Mr. Jorge Caspary
FDEP-Bureau of Waste Cleanup
2600 Blair Stone Road, MS-4535
Tallahassee, FL 32399-2400
E-mail: Jorge.Caspary@dep.state.fl.us
Telephone: (850) 921-9986

The HSWA Permit, the SB, and the associated Administrative Record, including the RFI Report, will be available to the public for viewing and copying at:

Environmental Management, CEV/ESC
Facility 1638, Samuel Phillips Parkway
Cape Canaveral Air Force Station, FL
For public access call (321) 853-0965

This information can also be found on-line at http://www.mission-support.org/45SW_IRP_EA

The HSWA Permit, the SB, and Facility 84920 Report summaries will be available for viewing and copying at:

Central Brevard Library
308 Forrest Avenue
Cocoa, FL, 32922

To request further information, you may contact one of the following people:

Ms. Teresa Green
Environmental Restoration Element Chief
45 CES/CEVR
1224 Jupiter Street
Patrick Air Force Base, FL 32925-3343
E-mail: teresa.green@patrick.af.mil
Telephone: (321) 853-0965

Mr. Jorge Caspary
See previous contact information

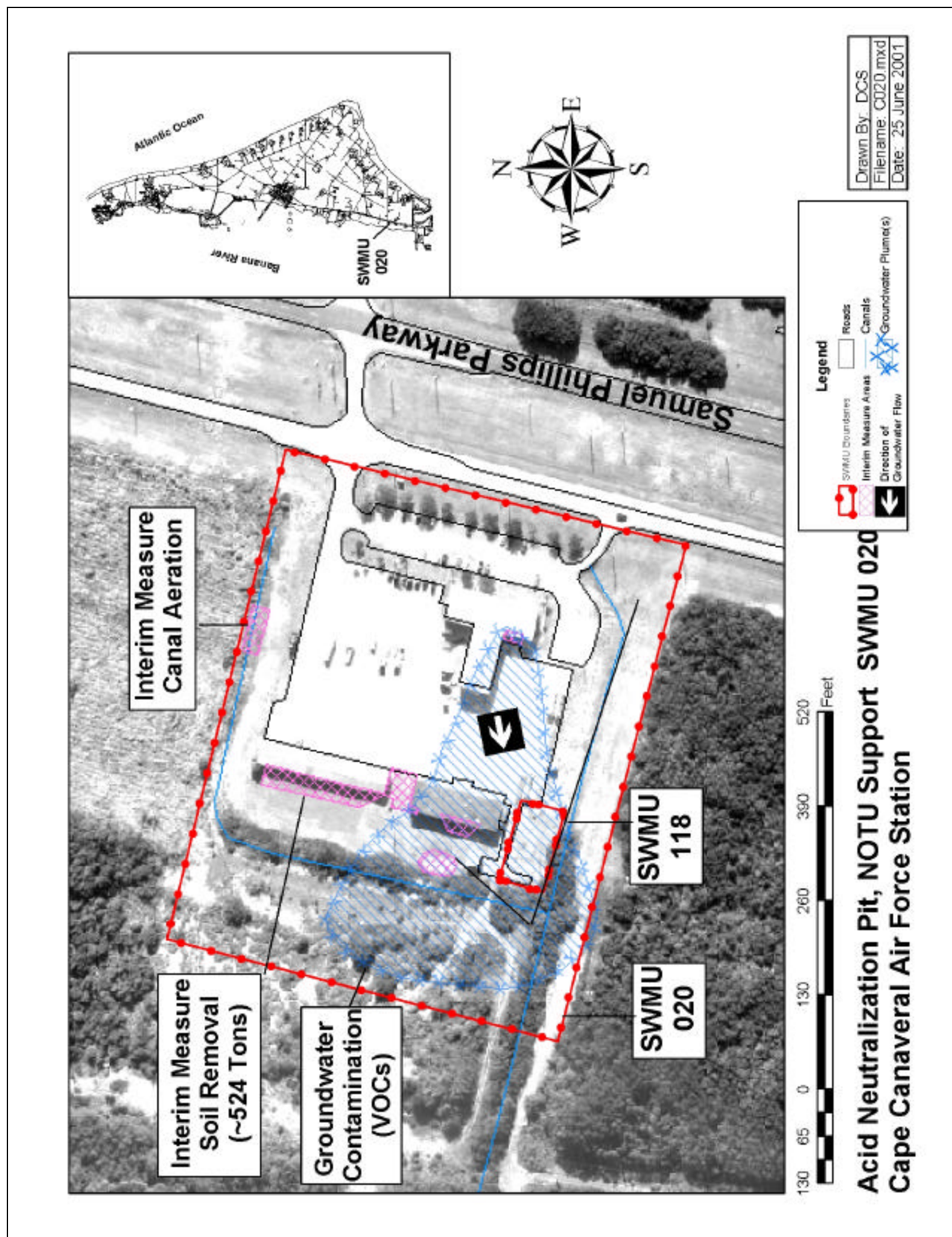
Mr. Timothy R. Woolheater, P. E.
EPA Federal Facilities Branch
Waste Management Division
Sam Nunn Atlanta Federal Center
61 Forsyth Street
Atlanta, GA 30303-8960
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FACILITY DESCRIPTION

USAF established the 45th SW as the primary organization for the Department of Defense aerospace force programs. Historically, the National Aeronautics and Space Administration (NASA) also performed space launch related operations on the 45th SW property. These operations have involved the use of toxic and hazardous materials. Under RCRA and the HSWA Permit (CCAFS Permit No. FL2800016121) issued by the USEPA, the 45th SW was required to perform an investigation to determine the nature and extent of contamination from Solid Waste Management Unit (SWMU) No. 20, Facility 84920, the NOTU Support Facility.

SITE DESCRIPTION AND HISTORY

Facility 84920 is located at the intersection of Pier Road and Samuel C. Phillips Parkway on CCAFS (See Figure 1). The facility was constructed in 1963 and was operated by the USAF as a valve cleaning lab until 1965. From 1965 to 1972, the facility operated as the Precision Equipment Cleaning and Testing Laboratory. In 1973, facility operations were transferred to the U.S. Naval Ordnance Test Unit (NOTU)



In accordance with RCRA Section 7004(b), this Statement of Basis summarizes the proposed remedy for CCAFS Facility 84920. For detailed information, consult the Facility 84920 RFI Report which is available for review at the 45th SW Environmental Management Office (See "How Do You Participate") or on-line at http://www.mission-support.org/45SW_IRP_EA.

and modified to a high pressure gas maintenance plant. Since 1979, the facility has been operated as vehicle maintenance support.

A “blowdown” pit, which reportedly received waste discharges, was located on the north side of Facility 84920. The blowdown pit received incoming waste from a pipe on the east side of the building. The industrial waste line then led from the blowdown pit to a sewage treatment plant (STP) that was constructed in 1963. The plant treated domestic waste from Facility 84920 and discharged the treated effluent to a spray field south of the STP, across a drainage swale. The STP was dismantled in 1977.

An Industrial Wastewater Treatment Plant (IWTP) was constructed to the west of Facility 84920 and was used to treat the waste acids generated during cleaning operations. The IWTP was used from 1963 to 1972 and received approximately 3,000 gallons of waste acids per year. When the neutralization basin associated with the IWTP was full (or overflowing from rainfall) basin contents were discharged to the swale west of Facility 84920.

Over the years, various substances have been used to support operations at Facility 84920. These include acids, caustics, paints, thinners, grease, oils, fuels, boiler water, deionized water, and trichloroethylene (TCE). A TCE tank was reportedly located either south or north of the building. As wastes accumulated, they were reportedly dumped into a drainage swale south of the facility, or discharged to the IWTP or the blowdown pit.

The USAF has conducted the following investigations:

- 1992-1993: A Preliminary Assessment including records search, site reconnaissance, and interviews with knowledgeable aerospace personnel interviews identified 10 areas of concerns which warranted further investigation. A Site Investigation (SI) was recommended to collect and analyze the site's environmental media

(soil, groundwater, surface water, and sediment) to evaluate the presence or absence of contamination.

- 1993-1995: The SI report concluded that the presence of constituents in soil, groundwater, surface water, and sediment might pose a risk to human health and the environment. The SI recommended that an RFI be conducted to assess the nature and extent of the contamination present at the site, and perform risk assessments to determine if the contamination is detrimental to human or ecological health.
- 1995-1996: An Interim Measure was performed to address several contaminated areas at the site. An underground storage tank was removed and soil contaminated with PCBs and PAHs was excavated. The clean-up action resulted in the removal of approximately 374 cubic yards (524 tons) of material.
- 1995-2001: An RFI was performed, detailing the sampling and analysis of site soil, groundwater, surface water, and sediment. These results were used to determine human health and ecological risks. The Human Health Risk Assessment (HHRA) indicated that potential risk exists from site soil and groundwater. The Ecological Risk Assessment (ERA) indicated that no unacceptable ecological risk is present at the site.
- 2001: A Corrective Measures Study (CMS) was performed in order to select the appropriate remedy for the site. It was determined that monitoring of groundwater would be needed and that land use controls would be implemented to ensure human health would be protected from unacceptable exposure to site soil and groundwater.
- 2001: A Long Term Monitoring (LTM) Workplan was submitted in 2001 and LTM was initiated. The 45th SW IRP team felt it was incumbent to implement LTM immediately following the CMS in order to

ensure that groundwater contaminants were appropriately monitored and tracked.

SUMMARY OF SITE RISK

As part of the RFI activities, an HHRA and an ERA were conducted to estimate the health and environmental risks associated with the site-specific contamination. The risk assessments were performed in accordance with risk management decision processes established by the USEPA, FDEP, and the USAF at the time the RFI was initiated.

The Chemicals of Concern (COCs) identified for human health during the RFI were:

- Soil: aroclor 1260, benzo(a)pyrene
- Groundwater: benzo(a)anthracene, benzo(b)fluoranthene, cis-1,2-dichloroethene, total PCBs, trichloroethene, vinyl chloride

Sediment at the Facility 84920 was not addressed in the human health risk assessment on the basis of incomplete exposure pathways for all potential receptors. Surface water was not found to pose an unacceptable risk or hazard to human health. A soil removal was performed on the basis of initial RFI data. The goal of the removal was to eliminate potential unacceptable human health risk to current and future site workers and to reduce potential risk to hypothetical future residents. Remaining soils exceed the one in one million (1/1,000,000) cancer risk threshold for the hypothetical future adult and child residents. The primary contributors to this risk are benzo(a)pyrene and aroclor 1260.

The initial human health risk assessment evaluated groundwater and determined that both the one in one million (1/1,000,000) cancer risk threshold and the noncarcinogenic hazard index target (1.0) were exceeded. Based on regulatory comments, additional sampling was performed and the groundwater risk assessment was re-calculated in the form of a Preliminary Risk Assessment (PRE). Based on the full data set used in the PRE, the major con-

tributor to cancer risk was vinyl chloride, while the most significant component of noncarcinogenic hazard was cis-1,2-dichloroethene. In addition to the six contaminants listed as COCs, eight other compounds exceeded the one in one million cancer threshold or the 1.0 noncarcinogenic hazard index target. These compounds were not identified as COCs because the maximum concentration detected at Facility 84920 was less than the Maximum Contaminant Level (MCL) established by USEPA.

The ERA was conducted to evaluate the possibility that land and aquatic organisms (eco-receptors) may be at risk from site-related contaminants. The ERA was based on laboratory analyses of soil, surface water, and sediment samples. Groundwater was not evaluated in the ERA, as there is no identified exposure pathway.

The ERA concluded that potential risk from the exposure to and/or ingestion of soil, surface water, or sediment by eco-receptors is marginal. Several factors mitigate the potential concern. These could include routine facility operation and maintenance activities, less than optimal habitat found within facility boundaries, the extent of the eco-receptor's normal foraging area, and the seasonal variability associated with the amount of surface water present at any given time.

WHAT ARE THE CLEANUP OBJECTIVES AND LEVELS?

The remedial action objectives (RAOs) are to:

- 1) Protect humans from exposure to shallow groundwater and prevent consumption of groundwater from the shallow aquifer (where contaminant concentrations are higher than regulatory standards), and
- 2) Prevent unacceptable human contact with site soils.

Table 1 lists the COCs present at Facility 84920. The first column lists the chemical name, the second column lists the maximum concentration in each impacted medium at

Facility 84920 during the RFI, and the last column presents the clean-up level to be achieved at the site. Please note that through the risk management decision process, several contaminants originally designated as COCs were determined not to pose an unacceptable risk (see “Summary of Site Risk”, above), and are therefore not addressed by the remedial action.

TABLE 1—CLEANUP GOALS

Site-Related Chemicals of Concern (COCs)	Maximum Detected Concentration	Site-Specific Clean-up Level ¹
GROUNDWATER		
Benzo(a)anthracene	0.35 ug/L	0.2 ug/L
Benzo(b)fluoranthene	0.27 ug/L	0.2 ug/L
Cis-1,2-dichloroethene	84 ug/L	70 ug/L
Total Aroclors	0.96 ug/L	0.5 ug/L
Trichloroethene	3.6 ug/L	3 ug/L
Vinyl chloride	19 ug/L	1 ug/L
SOIL		
Aroclor 1260	1.8 mg/kg	0.5 mg/kg
Benzo(a)pyrene	0.15 mg/kg	0.1 mg/kg

¹ Clean-up level represents the most stringent value among USEPA and FDEP criteria at the time of the final investigation.

CLEANUP ALTERNATIVES FOR FACILITY 84920

Clean-up alternatives are different combinations of plans to restrict site use and to contain, remove, and/or treat contamination in order to protect public health and the environment. Only two alternatives were considered because of low levels of contamination present at the Facility 84920. The clean-up alternatives considered for the Facility 84920 are summarized below.

No Action: Evaluation of the No-Action alternative is used as a basis for comparison with other alternatives. Under this alternative, no remedial action would be taken to reduce

human health risks or restrict site use. No monitoring of COC concentrations in the groundwater would be performed. It was determined this alternative would not attain the RAOs.

Land Use Controls and Natural Attenuation with Long Term Monitoring: Under this alternative, material processes such as biological degradation, dispersion, advection, and adsorption would reduce COC concentrations in groundwater to cleanup levels over time. Groundwater would be regularly sampled and analyzed to monitor and document the decrease in contaminant concentrations. Data collected during the RFI and other Basewide assessments indicate that biodegradation will likely reduce contaminant concentrations in groundwater below cleanup levels within ten years. Additionally, the 45th SW would implement site-specific land use controls to protect against exposure to contaminated soils and shallow groundwater and to prevent consumption of shallow groundwater. In the long term, this remedy alternative will meet RAOs and will also allow re-evaluation to determine if the remedy is working and provide an opportunity for change, if necessary. The 45th SW, USEPA, and FDEP have entered into a Memorandum of Agreement (MOA), which outlines how land use controls will be managed at the 45th SW. The MOA requires periodic inspections, condition certification, construction project coordination, and agency notification. Site-specific details can be found in the Facility 84920 Land Use Control Implementation Plan (LUCIP).

EVALUATION OF REMEDY ALTERNATIVES

Each cleanup alternative was evaluated to determine how each potential remedy would comply with the four general standards for corrective measures. The four general standards for corrective measures are:

- Overall protection of human health and the environment;
- Attain media cleanup standards;
- Control the sources of releases; and

- Comply with standards for management of wastes

The second alternative (Land Use Controls and Natural Attenuation with LTM) meets each of the above criteria, while the no action alternative remedy would not meet them.

LAND USE CONTROLS AGREEMENT

By separate MOA dated 23 December 1999, with USEPA and FDEP, CCAFS, on behalf of the Department of the Air Force, agreed to implement base-wide, certain periodic site inspection, condition certification, and agency notification procedures designed to ensure the maintenance by installation personnel of any site-specific land use controls deemed necessary for future protection of human health and the environment. A fundamental premise underlying execution of that agreement was that through the USAF's substantial good-faith compliance with the procedures called for therein, reasonable assurances would be provided to the USEPA and FDEP as to the permanency of those remedies which included the use specific land use controls.

Although the terms and conditions of the MOA are not specifically incorporated or made enforceable herein by reference, it is understood and agreed by the USAF, USEPA, and FDEP that the contemplated permanence of the remedy reflected herein shall be dependent on CCAFS's substantial good-faith compliance with the specific land use control maintenance commitments reflected therein. Should such compliance not occur or should the MOA be terminated, it is understood that the protectiveness of the remedy concurred in may be reconsidered and that additional measures may need to be taken to adequately ensure necessary future protection of human health and the environment.

WHAT IMPACTS WOULD THE CLEANUP HAVE ON THE LOCAL COMMUNITY?

There would be no impacts to the local community because groundwater is not used for potable water at the 45th SW. The natural attenuation and LTM alternative includes administrative actions to limit the use of groundwater until cleanup levels have been reached and to ensure that construction activities do not cause contaminant re-distribution. Additionally, residential use of the Facility 84920 is not occurring nor is it expected in the near future. As long as CCAFS remains an active gateway for the aerospace industry, Facility 84920 is expected to continue operating in an industrial capacity..

WHY DOES THE 45th SW IRP TEAM RECOMMEND THIS REMEDY?

The team recommends the proposed remedy because the naturally occurring attenuation processes observed at the site (and predicted with Base groundwater models) are sufficient for the removal of low concentrations of VOCs, SVOCs, and PCBs in groundwater. The LTM program will be used to assess and document reduction in contaminant concentrations to the cleanup goals. The land use controls will also prevent exposure to contaminants prior to the cleanup levels being achieved. The proposed remedy meets the four general standards for corrective measures.

NEXT STEPS

The 45th SW IRP team will review all comments on this SB to determine if the proposed remedy needs modification prior to implementation and prior to incorporating the proposed remedy into the CCAFS HSWA permit. If the proposed remedy is determined to be appropriate for implementation, then the LTM program will be continued, the land use controls will be initiated, and a Land Use Control Implementation Plan will be developed and incorporated into the MOA.



LAND USE CONTROL IMPLEMENTATION PLAN

FACILITY 84920 SOLID WASTE MANAGEMENT UNIT 20 (SWMU NO. 20) 45TH SPACE WING CAPE CANAVERAL AIR FORCE STATION BREVARD COUNTY, FLORIDA

Facility Description

Facility 84920, Solid Waste Management Unit 20 (SWMU No. 20), is located at the intersection of Pier Road and Samuel C. Phillips Parkway, Cape Canaveral Air Force Station, Florida. The facility was constructed in 1963 and was operated by the United States Air Force (USAF) as the Valve Cleaning Lab from 1963 until 1965. From 1965 until 1972, the facility operated as the Precision Equipment Cleaning and Testing Laboratory. In 1973, the facilities operations were transferred to the United States Navy Ordnance Test Unit (NOTU) and modified to a high-pressure gas maintenance plant. Since 1979 the facility has been operated as the vehicle maintenance support.

Location

(Reference Site Map on last page of this document)

Site Plan Coordinate	Northing	Easting
North	1491104.48	784859.80
West	1490565.44	784720.76
South	1490387.90	785405.26
East	1490933.36	785535.74

Objective

Implementation of site-specific land use controls to protect against exposure to contaminated soil and shallow groundwater and to prevent consumption of the shallow groundwater.

Land Use Controls (LUCs) to be Implemented:

Administrative:

- The property will be prohibited from residential or other non-industrial development without prior written notification to the Florida Department of Environmental Protection (FDEP) and the United States Environmental Protection Agency (USEPA) concerning the SWMU land use change. Dependent on site conditions and the nature and intensity of the proposed land use change, additional site investigations and assessments could be required for the USAF. Based on these analyses, additional remedial measures may be required prior to land use change.

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- Perform and document baseline LUC audit upon finalization of the Statement of Basis.
- Perform and document quarterly LUC compliance inspections in accordance with 45th SW LUC Operations Manual.
- Perform, document, and report an annual audit on LUC implementation, maintenance, and compliance in accordance with the 45th SW LUC Operations Manual and the current CCAFS Corrective Action Management Plan (CAMP).
- The property Land Use Control Implementation Plan (LUCIP) shall remain in effect until:
 - a) Changes to applicable Federal and State risk-based clean-up standards occur which indicate site contaminants no longer pose potential residential risk; or
 - b) Reduction in site contaminant concentrations to below Federal and State residential risk-based clean-up standards occurs.
- In the event of property realignment, transfer, or re-use for non-industrial or non-commercial purposes, assessment and remediation may be necessary to ensure that impacts to ecological receptors are not increased or to mitigate potential ecological impacts where residual contamination exists.

Soil:

- Soils will not be disturbed or moved during property development, maintenance or construction, without:
 - a) USAF review, coordination, and approval of the proposed construction/development plans via AF Form 103 (Base Civil Engineer Work Clearance Request), 332 (Base Civil Engineer Work Request), 813 (Request for Environmental Impact Analysis), or similar process;
 - b) Ensuring proper engineering controls are in-place so that unauthorized release or disposal of the affected media does not occur. This includes conducting appropriate testing and developing a disposal plan in accordance with the LUC Operations Manual prior to off-site disposal; and
 - c) Use of proper personal protection equipment by site workers, as determined by the project proponent's occupational health and safety advisor.
- The site will be posted with proper warning signs in accordance with the LUC Operations Manual and the CCAFS Hazardous and Solid Waste Amendments (HSWA) Permit.

Groundwater:

- The consumptive use of the site's surficial aquifer groundwater will be prohibited.
- Incidental consumption and dermal exposure to groundwater from the surficial aquifer will be prevented. This will be addressed by the project proponent's health and safety advisor.

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- Groundwater will not be contacted, pumped, or discharged during property development, maintenance, or construction, without:
 - a) USAF review, coordination, and approval of the proposed construction/development plans via AF Form 103 (Base Civil Engineer Work Clearance Request), 332 (Base Civil Engineer Work Request), 813 (Request for Environmental Impact Analysis), or similar process;
 - b) Ensuring proper engineering controls are in-place so that unauthorized release or disposal of the affected media (groundwater) does not occur. This includes conducting appropriate testing and developing a disposal plan in accordance with the LUC Operations Manual prior to any pumping or discharge of groundwater; and
 - c) Use of proper personal protection equipment by Site workers, as determined by the project proponent's occupational health and safety advisor.
- USAF will institute a long term monitoring (LTM) program of groundwater in the surficial aquifer in accordance with an approved LTM work plan and the CAMP as part of the CCAFS HSWA Permit. Reports will be submitted annually, along with revised work plan recommendations, until such a time as the relevant regulatory agencies agree that contaminant concentrations in groundwater no longer warrant long term monitoring.
- The site will be posted with proper warning signs in accordance with the LUC Operations Manual and the CCAFS HSWA permit.

Statement of Basis:

The Statement of Basis (SB) is currently being reviewed. It is anticipated that the SB will be accepted/incorporated into the HSWA Permit, scheduled for issuance early in 2002.

Additional Information:

Long Term Monitoring Plan: Natural attenuation (NA) is evaluated through LTM. LTM will be implemented on a quarterly basis for groundwater. The scope and magnitude of the LTM program are reviewed and adjusted annually, based on the most recent data trends.

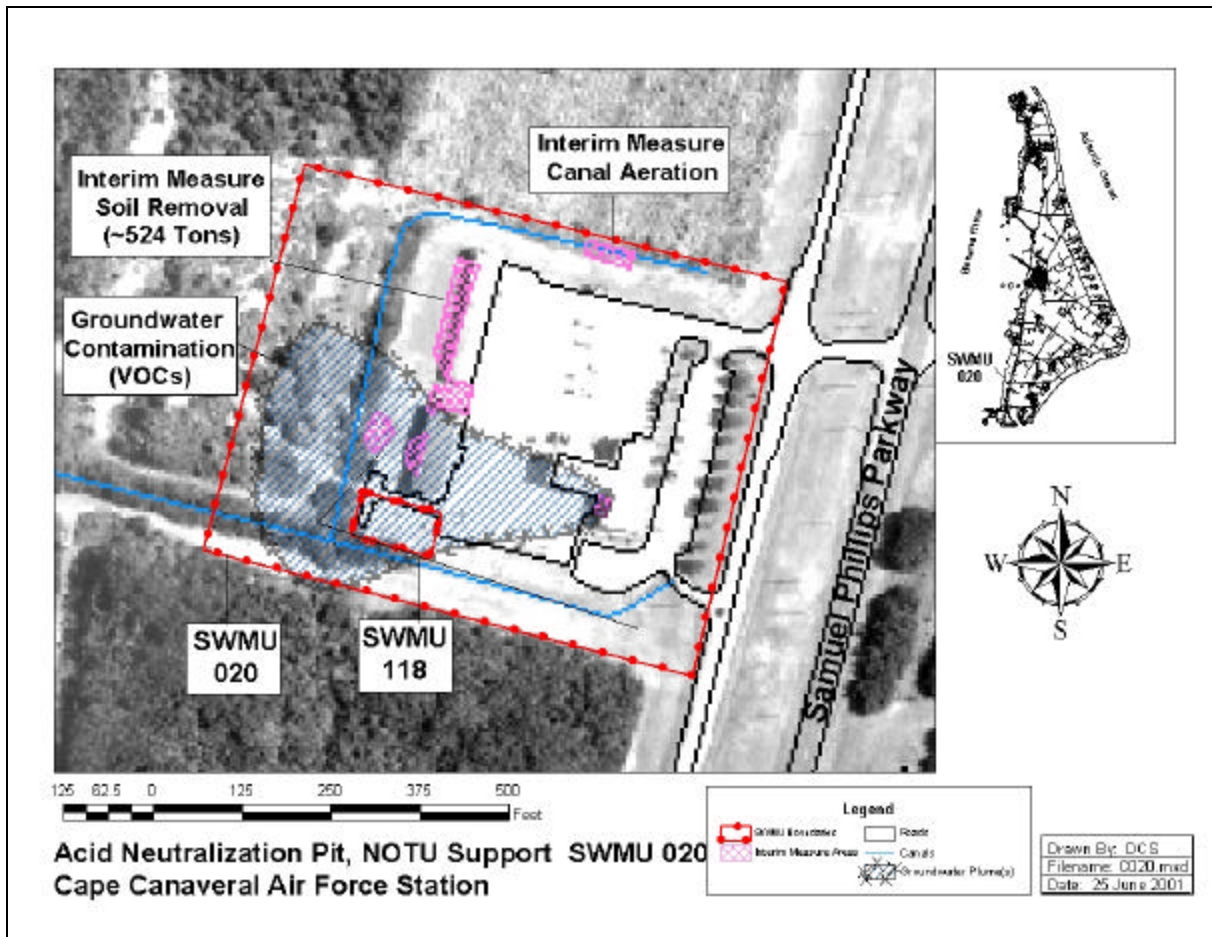
Pertinent Document Reference:

RCRA Facility Investigation/Interim Measure Report, Facility 84920, SWMU No. 20, Parsons Engineering Science, Inc., September 2000.

Corrective Measures Report and Long Term Monitoring Work Plan, Facility 84920, SWMU No. 20, BEM Systems, June 2001

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Facility 84920 – Site Map



Please contact the 45 SW Installation Restoration Program Office to obtain additional information, including: the 45 SW Land Use Controls Operation Plan; the CCAFS HSWA Permit; a complete record of corrective actions at the Facility 84920; or other related documents, guidance, and regulations. The IRP office can be reached by phone at (321) 853-0965. Information can also be obtained via the IRP website at http://www.mission-support.org/45SW_IRP_EA